

WHAT IS CLAIMED IS:

1. A cathode ray tube including a color selection apparatus mounted between a phosphor screen and an electron gun installed within a vacuum tube assembly of the cathode ray tube, and one or more support members for supporting the color selection apparatus in the vacuum tube assembly, each of the
5 one or more support members being formed by a spring comprising:

a fixed section secured to the color selection apparatus;

a locking section connected to the vacuum tube assembly; and

a center section formed between the fixed section and the locking section,

10 wherein the fixed section and the center section are separated by and bent at a first folding trace, and the center section and the locking section are separated by and bent at a second folding trace, and

wherein if a direction along a width of the spring is X, a direction along a length of the springs is Y, the first folding trace has an angle θ_1 with a straight line
15 drawn on the fixed section along direction X, and the second folding trace has an angle θ_2 with a straight line drawn on the center section along direction X, the angle θ_2 is greater than the angle θ_1 .

2. The cathode ray tube of claim 1, wherein direction of bent between the fixed section and the center section is opposite to the direction of bent between the
20 center section and the locking section.

3. The cathode ray tube of claim 1, wherein each of the one or more support members further comprises a holder that is fixed to the color selection

apparatus and to the corresponding fixed section.

4. The cathode ray tube of claim 3, wherein the fixed section of each of the one or more support members is welded to the holder of the corresponding said spring.

5 5. The cathode ray tube of claim 3, wherein the first folding trace is formed to the outside of areas of the support members making contact with the holders.

6. The cathode ray tube of claim 1, wherein a connecting hole is formed in the locking section, and the connecting hole is secured to a stud pin mounted to an inner surface of the panel of the vacuum tube assembly.

10 7. The cathode ray tube of claim 6, wherein the connecting hole is circular, and a distance of a straight line that passes through a center of the connecting hole and is perpendicular to the second folding trace is 5mm or greater in length.

8. The cathode ray tube of claim 1, wherein if a length along direction X of the spring from a plane of the fixed section to a corner of a plane of the locking section is h_1 , and a length along direction X of the springs from the plane of the fixed section to a corner of a plane of the locking section is h_2 , the following condition is satisfied:

$$1\text{mm} \leq h_2 - h_1 \leq 5\text{mm}.$$

9. The cathode ray tube of claim 1, wherein the angle θ_1 satisfies the following condition:

$$0^\circ < \theta_1 \leq 45^\circ.$$

10. The cathode ray tube of claim 1, wherein the angle θ_2 satisfies the

following condition:

$$30^{\circ} \leq \theta_2 \leq 70^{\circ}.$$

11. A support member for supporting a color selection mounted within a vacuum tube assembly of a cathode ray tube comprising:

- 5 a fixed section secured to the color selection apparatus;
- a locking section secured to the vacuum tube assembly; and
- a center section formed between the fixed section and the locking section,
- wherein the fixed section and the center section are separated by a first folding trace and are bent at the first folding trace, and the center section and the locking
- 10 section are separated by a second folding trace and are bent at the second folding trace, and wherein an angle θ_1 formed between the first folding trace and a straight line drawn on the fixed section along a direction X is greater than an angle θ_2 formed between the second folding trace and a straight line drawn on the center section along the direction X, where the X direction is along a width of the support
- 15 member.

12. The support member of claim 11, wherein a bending direction between the fixed section and the center section is opposite to a bending direction between the center section and the locking section.

13. The support member of claim 11, further comprising a holder that is

20 fixed to the color selection apparatus and to the corresponding fixed section.

14. The support member of claim 13, wherein the fixed section is welded to the holder.

15. The support member of claim 11, wherein a connecting hole is formed in the locking section, and the connecting hole is secured to a stud pin mounted to an inner surface of the panel of the vacuum tube assembly.

5 16. The support member of claim 15, wherein the connecting hole is circular, and a distance of a straight line that passes through a center of the connecting hole and is perpendicular to the second folding trace is 5mm or greater in length.

10 17. The support member of claim 11, wherein if a length along direction X of the support member from a plane of the fixed section to a corner of a plane of the locking section is h_1 , and a length along direction X of the springs from the plane of the fixed section to a corner of a plane of the locking section is h_2 , the following condition is satisfied:

$$1\text{mm} \leq h_2 - h_1 \leq 5\text{mm}.$$

15 18. The support member of claim 11, wherein the angle θ_1 satisfies the following condition:

$$0^\circ < \theta_1 \leq 45^\circ.$$

19. support member of claim 11, wherein the angle θ_2 satisfies the following condition.

$$30^\circ \leq \theta_2 \leq 70^\circ.$$

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